

CDP-M29

SERVICE MANUAL

*AEP Model
UK Model*



CDP-M29 is the COMPACT DISC PLAYER in XO-D10CD/D20CD.

SPECIFICATIONS

Frequency response 2 Hz to 20 kHz $+0.5$ dB
Signal to noise ratio More than 75 dB
Harmonic distortion Less than 0.7% (at 1 kHz)

Outputs

	Type	Output level	Load impedance
LINE OUT	4-pin	2 V (47 kohms)	More than 10 kohms

Weight Approx. 3 kg (6 lb 10 oz), net
Dimensions Approx. 355 × 80 × 275 mm (w/h/d)
(14 × 3 $\frac{1}{4}$ × 10 $\frac{7}{8}$ inches)
incl. projecting parts and controls

Power consumption
10 watts

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK
⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE
PARTS LIST ARE CRITICAL TO SAFE OPERATION.
REPLACE THESE COMPONENTS WITH SONY PARTS
WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS
MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

COMPACT DISC PLAYER
SONY®



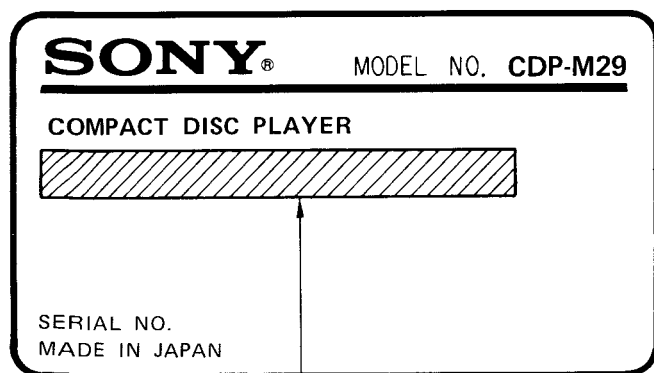
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SERVICING NOTES

MODEL IDENTIFICATION

— Specifications Labels —



AEP model: AC: 220 V ~ 50/60 Hz 10 W

UK model: AC: 240 V ~ 50/60 Hz 10 W

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON CHECKING LASER DIODE LIGHT EMISSION

The laser beam on this set is converged by the objective lens in the optical block so that it focuses on the disc reflective surface. Therefore, when checking light emission of the laser diode, be sure to keep the eyes more than 30 cm away from the objective lens.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

1. Laser Diode Properties

- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output: max. 44.6 μ W*

* This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

1. Laser-didoe data

- Materiale: GaAlAs
- Bølgelængde: 780 nm
- Udstråling: Kontinuerlig
- Laseroutput: Max. 0,4 mW*

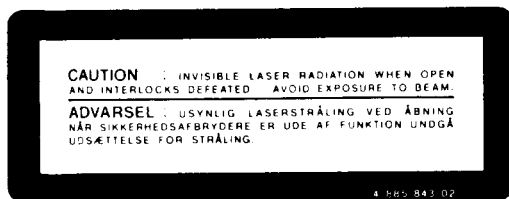
* Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.

- Klassifikation: Klasse IIIb.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

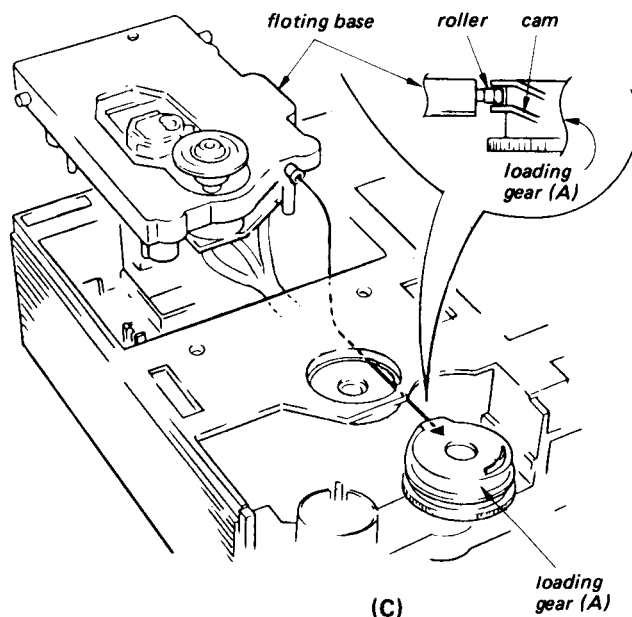
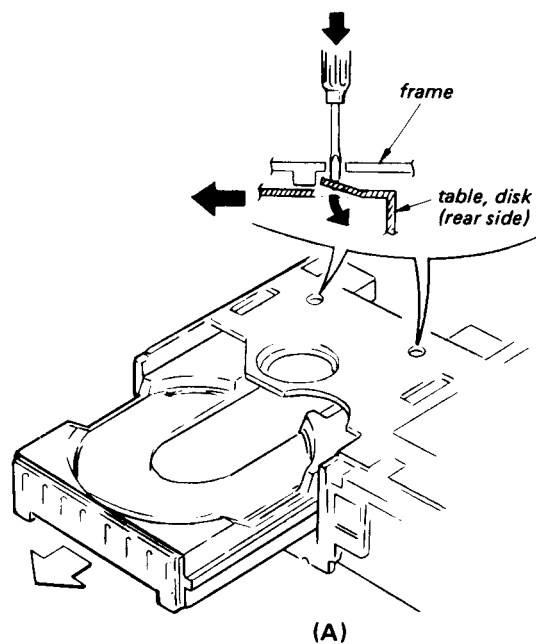
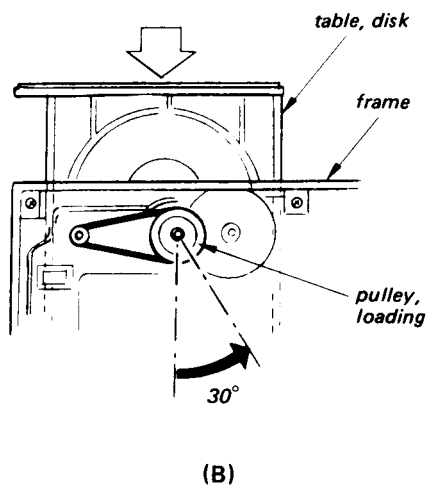
1. Advarsel Mærkning



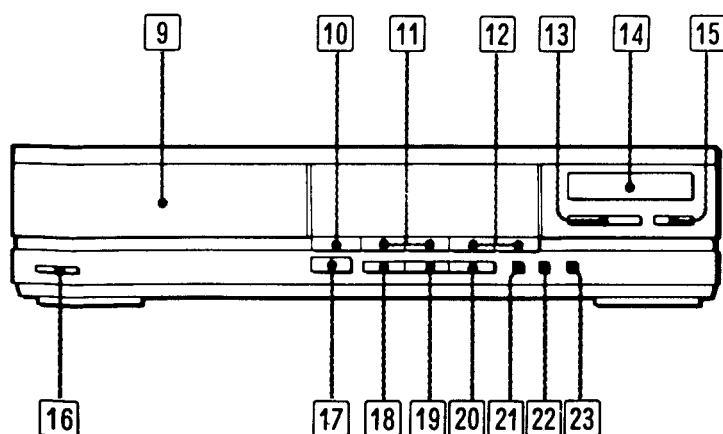
VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkyvätöntä) silmille vaarallista lasersäteilyä.

NOTES ON REPAIR

- When removing the disk-table, put the small screw-driver into the hole. Pull off the disk-table toward you while pushing the screwdriver. See figure (A).
- When re-assembling the disk-table, rotate the loading pulley by 30-degree in the direction of the arrow by finger, and put the table slowly. See figure (B).
- When re-assembling the floating base, set it so that the floating-base roller is engaged with the cam of the loading gear (A). See figure (C).



PARTS IDENTIFICATION



- 9 Disc compartment
- 10 DISPLAY button
- 11 ◀◀ / ▶▶ (AMS * / RMS **) buttons
- 12 ◀◀ / ▶▶ (manual search) buttons
- 13 || (pause) button
- 14 ▷ (play) button
- 15 ■ (stop) button
- 16 POWER switch
- 17 ▲ OPEN/CLOSE button
- 18 PROGRAM button
- 19 SHUFFLE button
- 20 CONTINUE button
- 21 CHECK button
- 22 CLEAR button
- 23 REPEAT button

* Automatic Music Sensor
 ** Random Music Sensor

SECTION 1

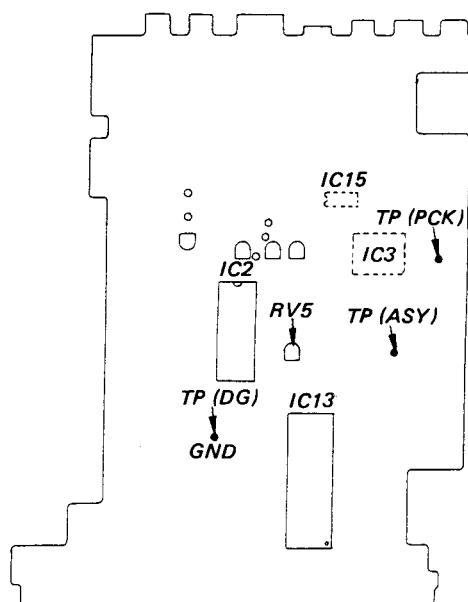
ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 (Part No. 3-702-101-01) disc unless otherwise indicated.
3. Use the oscilloscope with more than 10 M Ω impedance.

RF PLL Free-run Frequency Check and Adjustment

1. Connect test points TP (ASY) to ground with jumper wire.
2. Press OPEN/CLOSE button and open the disk holder.
3. Check for 4.3218 MHz at test point TP (PCK) using a frequency counter. If not, adjust RV5.
4. Remove lead wire connecting TP (ASY) and ground.

Adjustment Location: main board

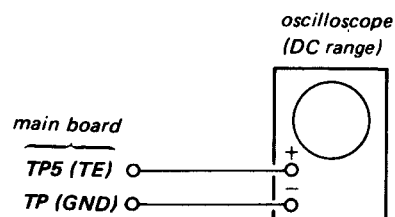


— Component Side —

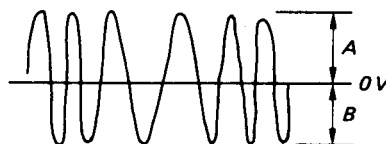
E-F Balance Adjustment

This adjustment should be made when replacing Optical Pick-up Block.

Procedure:

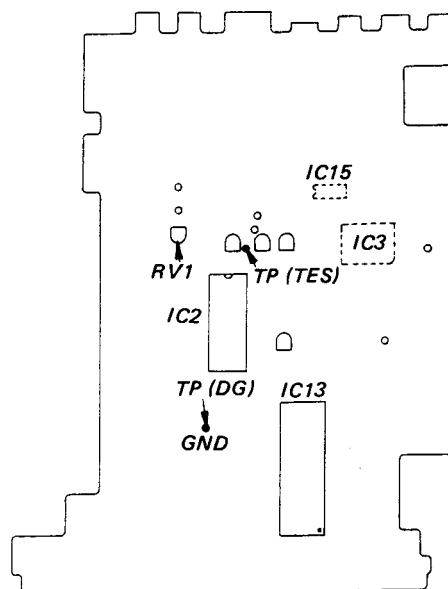


1. Connect oscilloscope to test point TP (TES) and ground.
2. Turn POWER switch on.
3. Put disc (YEDS-18) in and playback the 6th selection.
4. Press ◀ FF or ▶ REW button.
5. Adjust RV1 for a vertically-symmetrical waveform as shown below. (A = B)



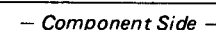
VOLT/DIV: 1V
TIME/DIV: 1ms

Adjustment Location: main board



— Component Side —

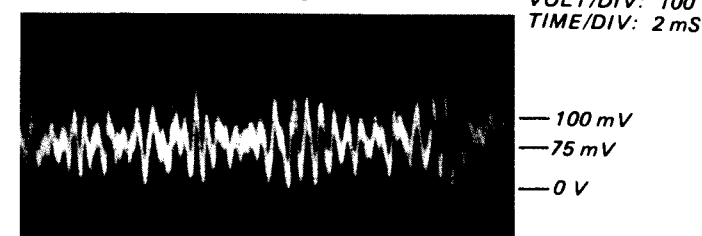
Procedure:



Symptoms	Gain	Focus	Tracking
● The time until music starts becomes longer for STOP → ▷PLAY or automatic selection (◀◀ ▶▶ buttons pressed. (Normally takes about 2 seconds.)		low	low or high
● Music does not start and disc continues to rotate for STOP → ▷PLAY or automatic selection (◀◀ ▶▶ buttons pressed.)		—	low
● Disc table opens shortly after STOP → ▷PLAY .		low or high	—
● Sound is interrupted during PLAY. Or time counter display stops progressing.		—	low
● More poise during 2-axis device operation.		high	high

— Simple Adjustment. —

Procedure:



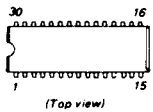
-
- VOLT/DIV: 1 V
TIME/DIV: 2 mS
- 0 V

— *Component Side* —

SECTION 2
DIAGRAMS

● Semiconductor Lead Layouts

CXA1081S



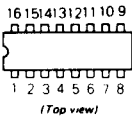
M5231TL



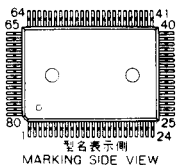
CXA1182S



M5290P-16
TA8406P



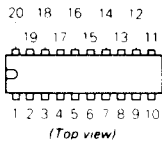
CXD1125Q



2SA1345
2SC3399
2SC3402



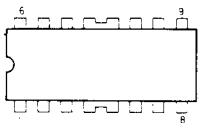
CXD1161P-1



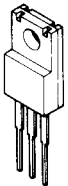
2SB1013
2SC3622



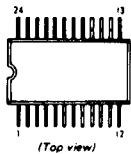
LA6520



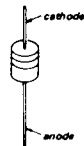
2SB1274SA-Q
2SD1913SA-Q



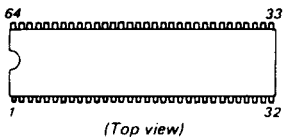
LC9600P-144



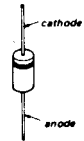
RD5.1ES-B



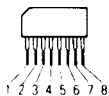
MSC6458-18SS



RD6.8ES-B
1SS132
10E2

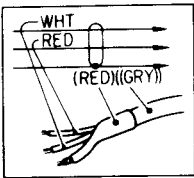


M5218L



Note on Printed Wiring Boards:

- Color code or sleeving over the end of the jacket.



- ○ : parts extracted from the component side.
- ○ : Jumper wire connected to the ground pattern on the component side.

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- $\triangle$: internal component.
- --- : B+ bus.
- --- : B- bus.
- $\square$: adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : STOP
- () : PLAY
- Voltages are taken with a VOM (50 $\text{k}\Omega/\text{V}$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- $\rightarrow$: CD
- Switch

Ref. No.	Switch	Position
SW1	POWER	OFF
SW3	CLEAR	OFF
SW4	OPEN/CLOSE	OFF
SW5	REPEAT	OFF
SW6	PLAY	OFF
SW7	PROGRAM	OFF
SW8	SEARCH REVERSE	OFF
SW9	AMS REVERSE	OFF
SW11	PAUSE	OFF
SW12	SHUFFLE	OFF
SW13	CHECK	OFF
SW14	SEARCH FORWARD	OFF
SW15	AMS FORWARD	OFF
SW16	DISPLAY	OFF
SW17	STOP	OFF
SW18	CONTINUE	OFF
SW401	LIMIT	OFF
SW901	LOADING	OFF

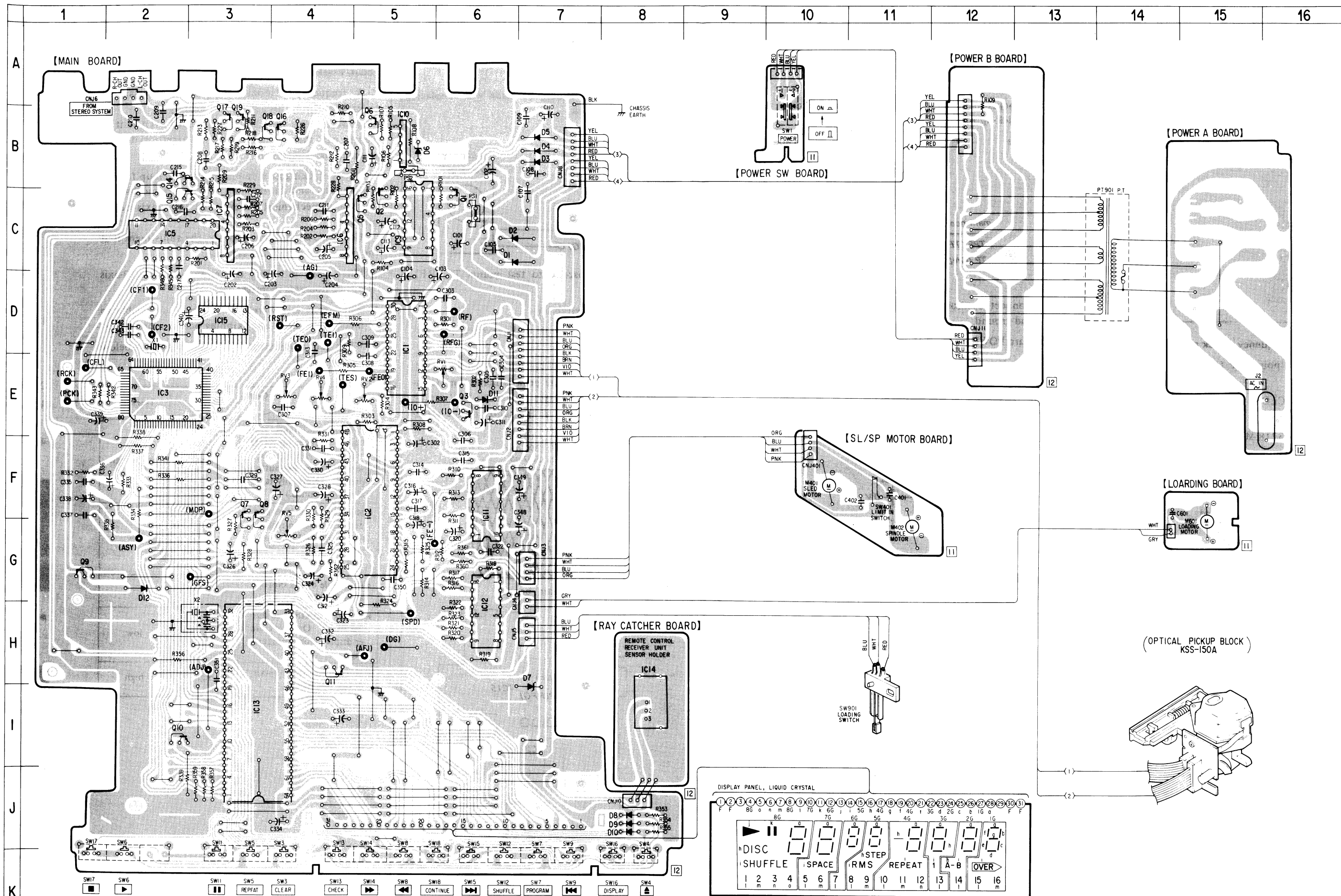
● SEMICONDUCTOR LOCATION

Ref. No.	Location
D1	C-6
D2	C-6
D3	B-7
D4	B-7
D5	B-7
D6	B-5
D7	H-7
D8	J-8
D9	J-8
D10	J-8
D11	E-6
D12	G-2
IC1	D-5
IC2	F-5
IC3	E-2
IC5	C-2
IC6	C-4
IC7	C-3
IC9	C-5
IC10	B-5
IC11	F-6
IC12	H-6
IC13	I-3
IC14	I-8
IC15	D-3
Q1	C-6
Q2	C-5
Q3	E-6
Q5	C-5
Q6	B-5
Q7	F-3
Q8	F-3
Q9	G-1
Q10	I-2
Q11	H-4
Q14	B-2
Q15	C-2
Q16	B-4
Q17	B-3
Q18	B-3
Q19	B-3

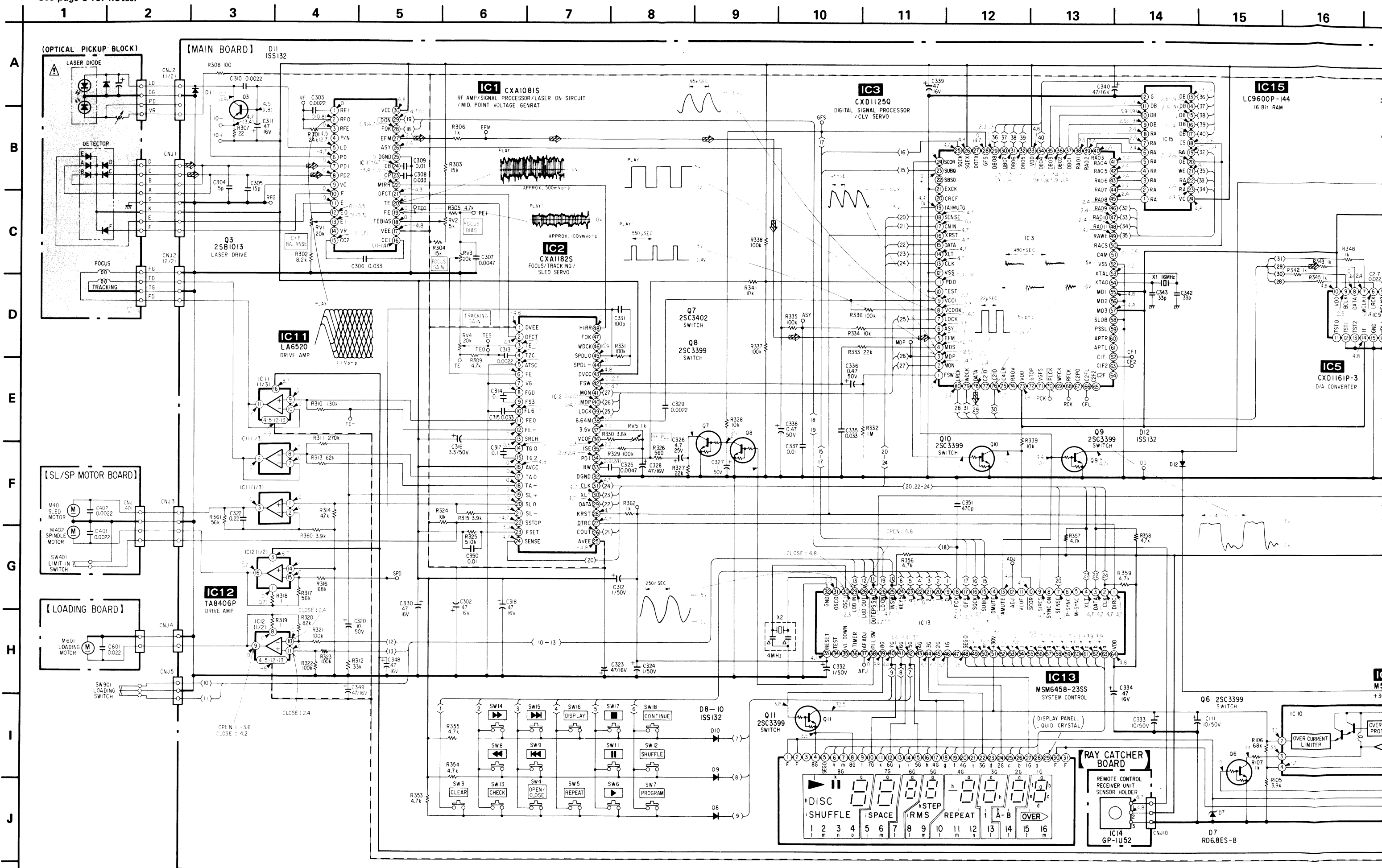
Note: The components identified by shading and mark $\triangle$ are critical for safety. Replace only with part number specified.

CONDUCTOR
TION

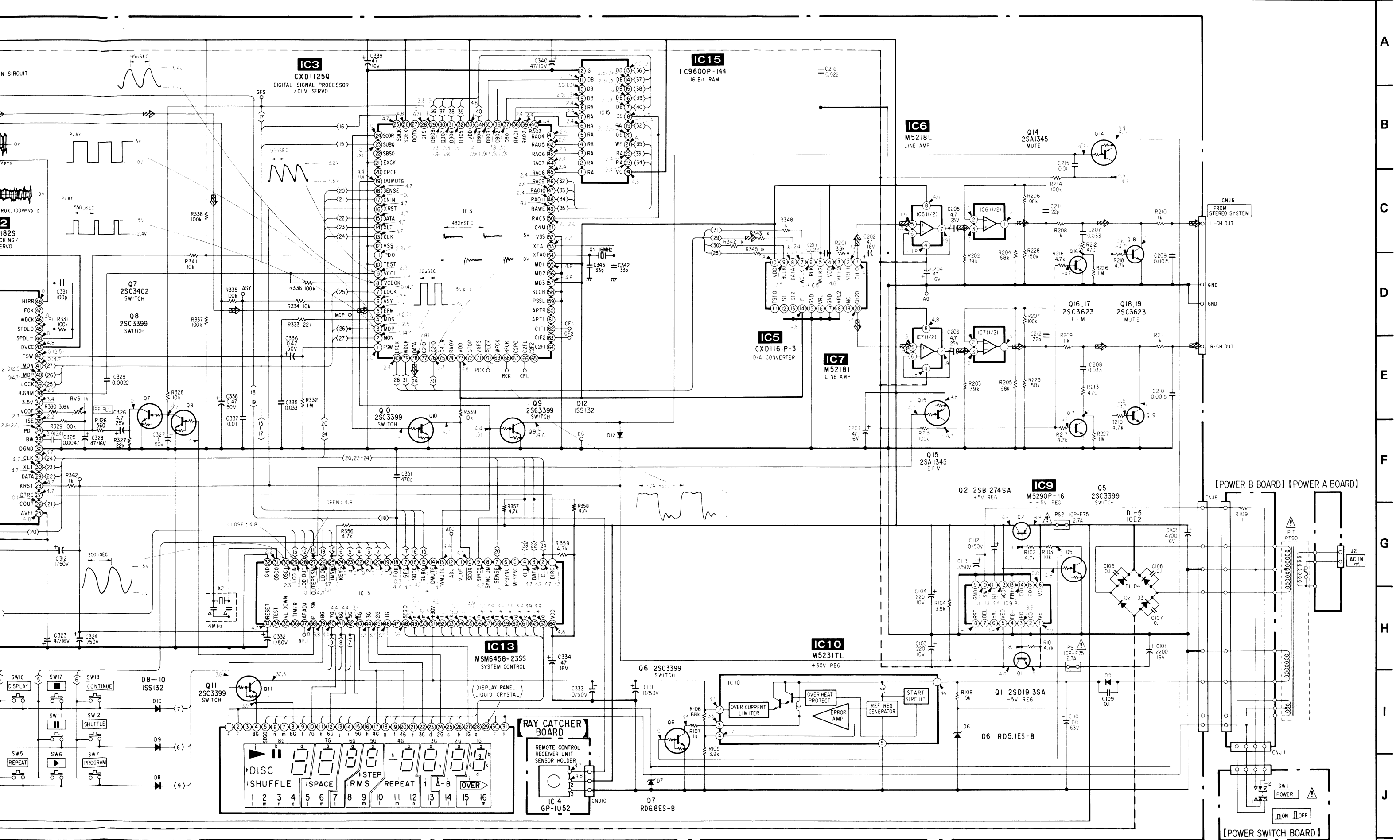
Location
C-6
C-6
B-7
B-7
B-5
H-7
J-8
J-8
E-6
G-2
D-5
F-5
E-2
C-2
C-4
C-3
C-5
B-5
F-6
H-6
I-3
I-8
D-3
C-6
C-5
E-6
C-5
B-5
F-3
F-3
G-1
I-2
H-4
B-2
C-2
B-4
B-3
B-3



• See page 8 for notes.



7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23



SECTION 3
EXPLODED VIEWS AND PARTS LIST

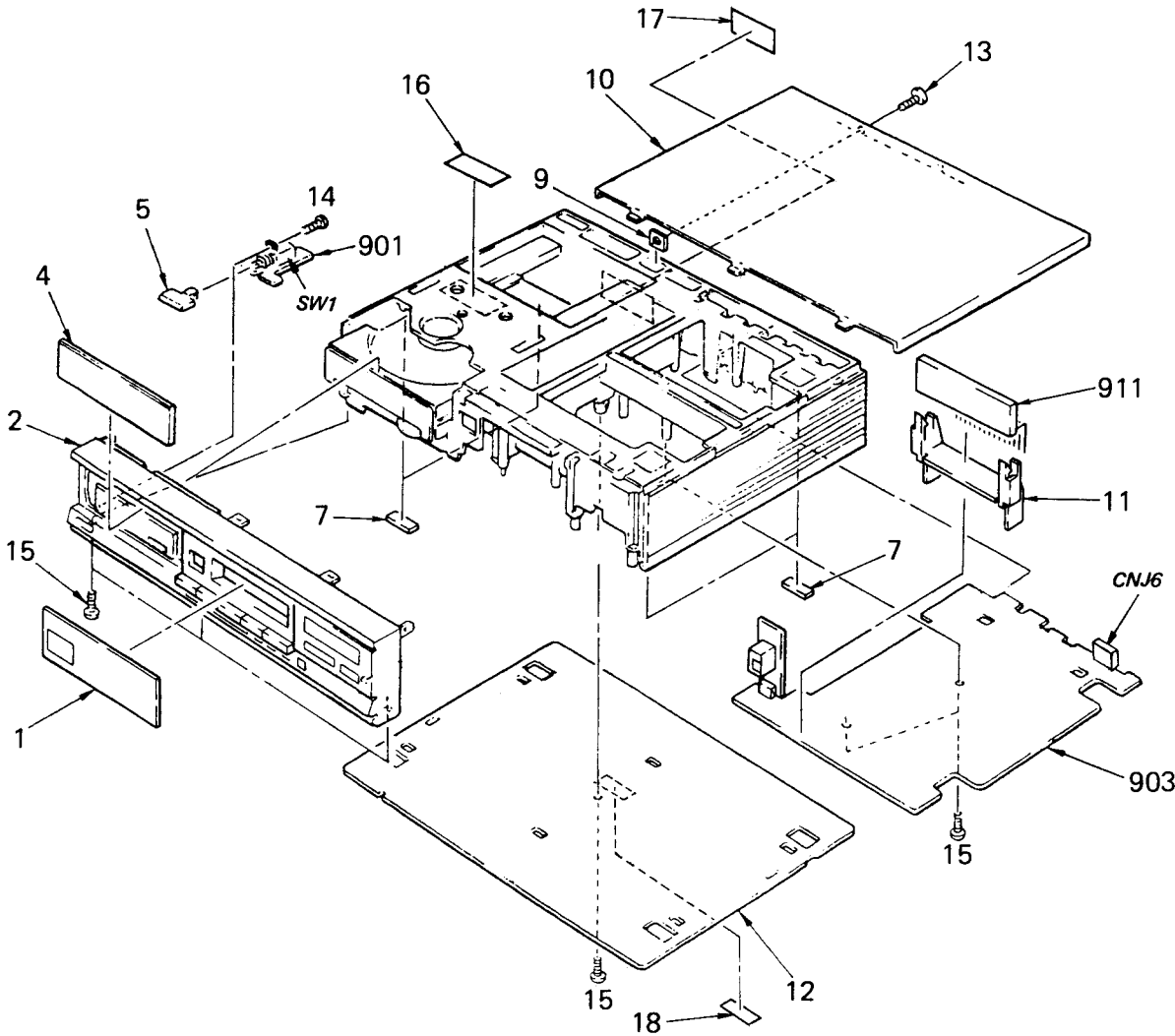
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
(RED) ... KNOB, BALANCE (WHITE)
↑ Cabinet's Color ↑ Parts Color

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

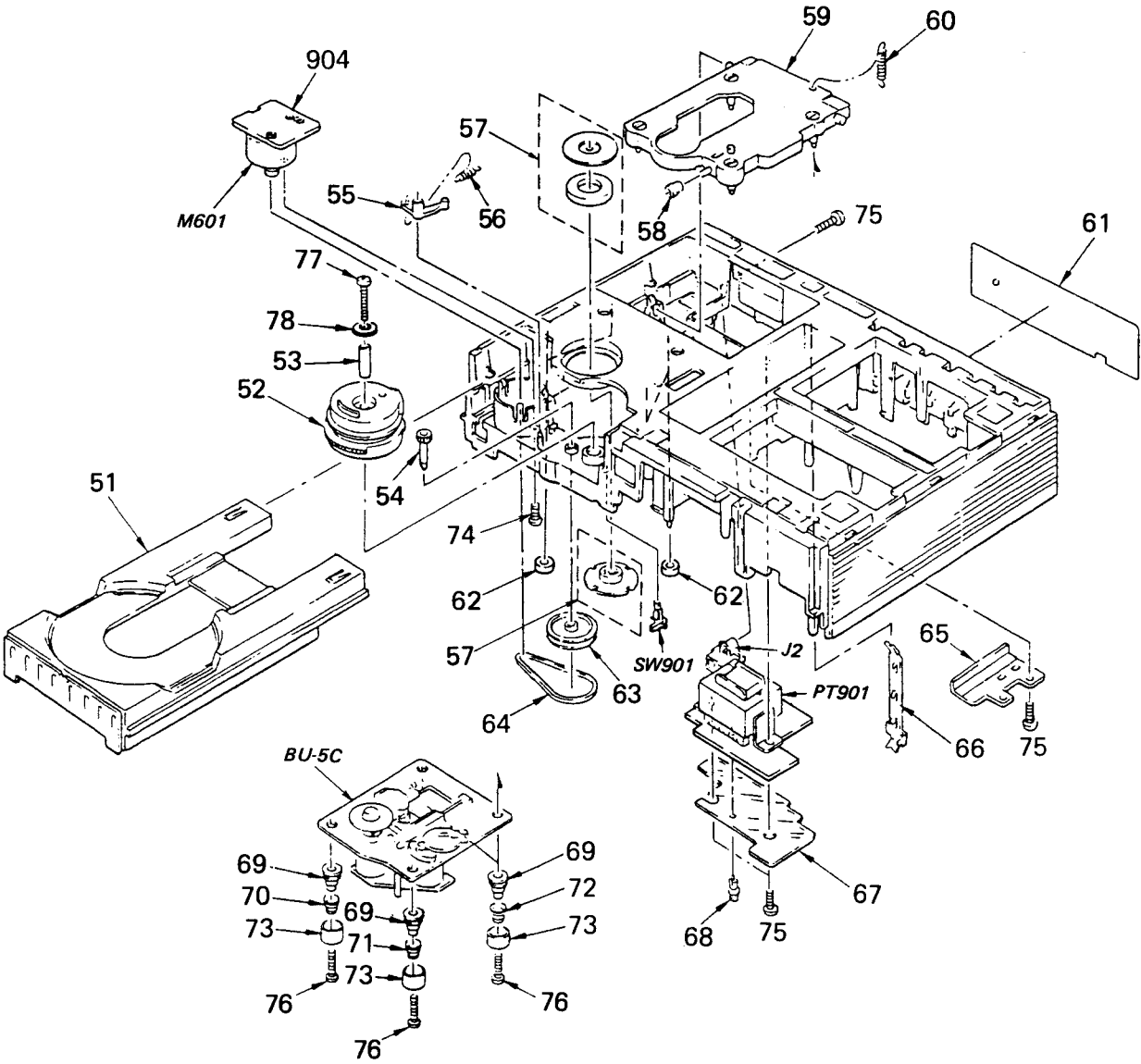
(1) CABINET ASSEMBLY



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	4-922-614-01	PLATE, INDICATION		13	3-703-685-21	SCREW (+BV 3X8)	
2	X-4917-539-1	PANEL ASSY, FRONT		14	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
4	4-922-609-01	PANEL, LOADING		15	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
5	4-917-525-41	KNOB, POWER		16	*4-885-843-02	LABEL, CAUTION, LASER	
7	4-917-524-01	FELT, FOOT		17	*4-885-838-00	LABEL, CLASS 1	
9	*4-918-670-01	SUPPORT, GROUND		18	3-703-079-21	(UK)...LABEL, CAUTION (BACK)	
10	4-917-536-31	CASE		CNJ6	1-566-211-11	PIN, CONNECTOR 4P (LINE IN/OUT)	
11	*4-922-613-01	HOLDER		901	*1-623-668-11	PC BOARD, POWER SW	
12	*4-917-535-01	PLATE, BOTTOM		903	*A-4651-184-A	MOUNTED PCB, MAIN	
				911	1-519-440-11	INDICATOR TUBE, FLUORESCENT	

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

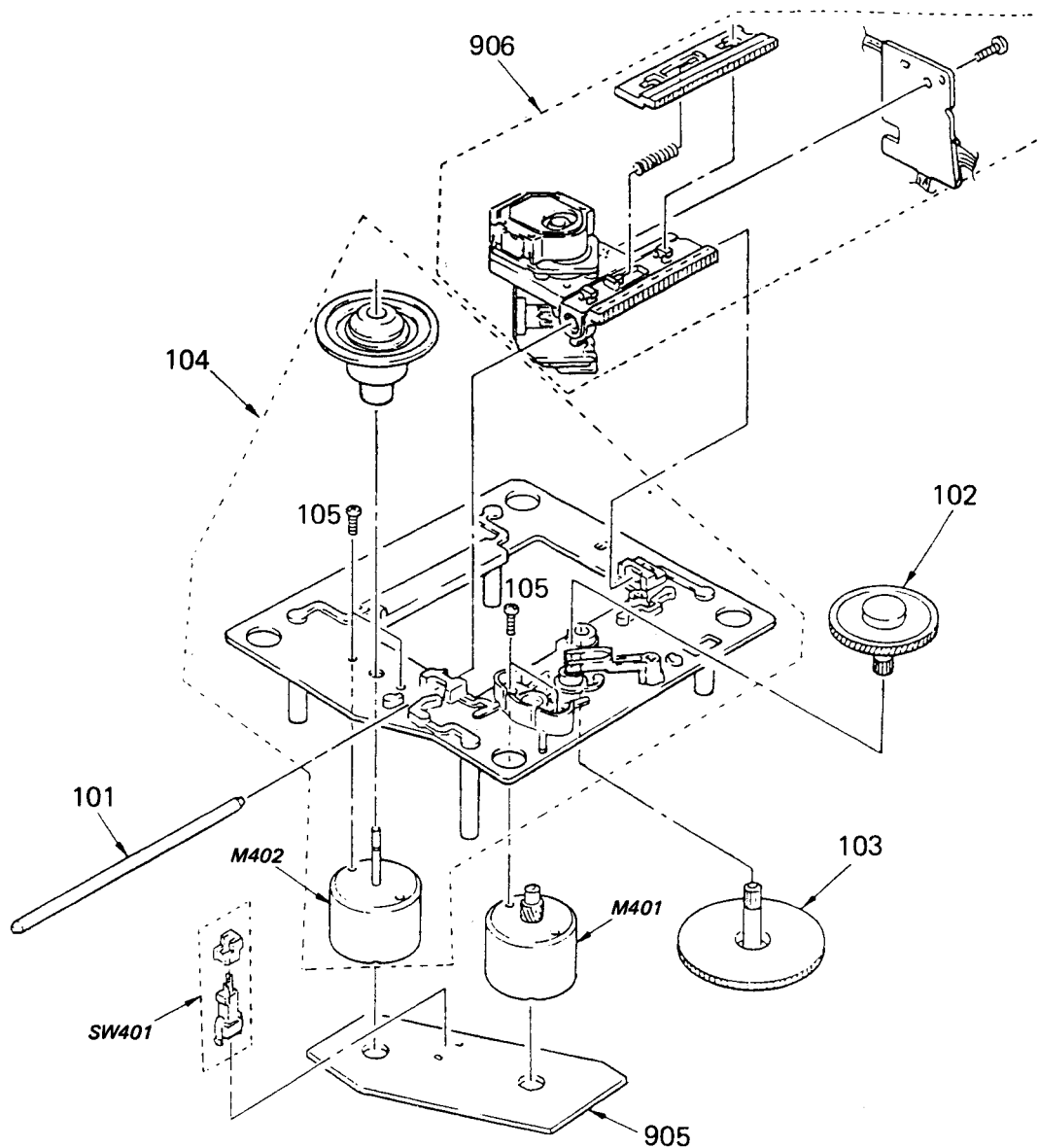
(2) FRAME ASSEMBLY



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	*4-922-604-01	TABLE, DISK		67	4-917-510-01	SHEET, INSULATING	
52	4-917-534-01	GEAR (A), LOADING		68	*3-531-576-11	RIVET	
53	*4-917-523-01	COLLAR, CAM		69	4-917-562-01	INSULATOR	
54	4-917-516-01	GEAR (B), LOADING		70	4-917-541-01	SPRING (B)	
55	4-917-519-01	LEVER, SET		71	4-918-669-01	SPRING (W)	
56	4-917-514-01	SPRING, TENSION		72	4-917-507-01	SPRING (H)	
57	A-4665-024-A	MAGNET ASSY		73	4-917-508-01	HOLDER, SP	
58	4-917-515-01	ROLLER		74	7-621-759-30	+PSW, 2.6X5	
59	4-917-537-01	BASE, FLOATING		75	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
60	4-917-526-01	SPRING, TENSION		76	7-685-535-19	SCREW +BTP 2.6X10 TYPE2 N-S	
61	4-922-626-01	(AEP)...PLATE (O/P TERMINAL), INDICATION		77	7-685-552-19	SCREW +BTP 3X25 TYPE2 N-S	
	4-922-627-01	(UK)...PLATE (O/P TERMINAL), INDICATION		78	0-056-028-00	WASHER, PLAIN, 14 DIA.	
62	*3-576-990-01	CUSHION		904	*1-620-603-11	PC BOARD, LOADING MOTOR	
63	4-917-521-01	PULLEY, LOADING		J2	*1-526-931-11	INLET, AC	
64	4-917-522-02	BELT		M601	A-4608-330-A	MOTOR ASSY	
65	*4-917-517-01	GUIDE, LEAD		PT901	*1-449-025-11	TRANSFORMER, POWER	
66	*4-917-511-01	PLATE, GROUND		SW901	1-570-203-11	SWITCH, LEAF (LOADING)	

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

(3) PICKUP ASSEMBLY (BU-5C)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	4-917-565-01	SHAFT, SLED		905	*1-626-304-11	PC BOARD, SL/SP MOTOR	
102	4-917-567-01	GEAR (M)		906	△.8-848-062-01	PICKUP, OPTICS KSS-150A	
103	4-917-564-01	GEAR (P), FLATNESS		M401	X-4917-504-1	MOTOR ASSY	
104	X-4917-523-1	BASE ASSY(including M402:SPINDLE MOTOR)		SW401	1-571-274-11	SWITCH, LEAF (LIMIT)	
105	7-621-255-15	SCREW +P 2X3					

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

SECTION 4

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF: μF , PF: $\mu\mu\text{F}$.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, $U: \mu$, for example:

UA...: μ A..., UPA...: μ PA...,

UPC...: μ PC, UPD...: μ PD...

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
901	*1-623-668-11	PC BOARD, POWER SW	C314	1-136-165-00	FILM 0.1MF 5% 50V
903	*A-4651-184-A	MOUNTED PCB, MAIN	C315	1-136-159-00	FILM 0.033MF 5% 50V
904	*1-620-603-11	PC BOARD, LOADING MOTOR	C316	1-123-382-00	ELECT 3.3MF 20% 50V
905	*1-626-304-11	PC BOARD, SL/SP MOTOR	C317	1-136-165-00	FILM 0.1MF 5% 50V
906	*1-848-062-01	PICKUP, OPTICS KSS-150A	C318	1-124-477-11	ELECT 47MF 20% 16V
911	1-519-440-11	INDICATOR TUBE, FLUORESCENT	C320	1-123-875-11	ELECT 10MF 20% 50V
C101	1-124-556-11	ELECT 2200MF 20% 16V	C322	1-136-169-00	FILM 0.22MF 5% 50V
C102	1-124-898-11	ELECT 4700MF 20% 16V	C323	1-124-477-11	ELECT 47MF 20% 16V
C103	1-124-444-00	ELECT 220MF 20% 10V	C324	1-124-499-11	ELECT 1MF 20% 50V
C104	1-124-444-00	ELECT 220MF 20% 10V	C325	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C105	1-136-165-00	FILM 0.1MF 5% 50V	C326	1-123-369-00	ELECT 4.7MF 20% 25V
C106	1-136-165-00	FILM 0.1MF 5% 50V	C327	1-124-499-11	ELECT 1MF 20% 50V
C107	1-136-165-00	FILM 0.1MF 5% 50V	C328	1-124-477-11	ELECT 47MF 20% 16V
C108	1-136-165-00	FILM 0.1MF 5% 50V	C329	1-161-375-00	CERAMIC 0.0022MF 20% 16V
C109	1-136-165-00	FILM 0.1MF 5% 50V	C330	1-124-477-11	ELECT 47MF 20% 16V
C110	1-124-572-11	ELECT 100MF 20% 63V	C331	1-162-282-31	CERAMIC 100PF 10% 50V
C111	1-123-875-11	ELECT 10MF 20% 50V	C332	1-124-499-11	ELECT 1MF 20% 50V
C112	1-123-875-11	ELECT 10MF 20% 50V	C333	1-123-875-11	ELECT 10MF 20% 50V
C113	1-123-875-11	ELECT 10MF 20% 50V	C334	1-124-477-11	ELECT 47MF 20% 16V
C202	1-124-477-11	ELECT 47MF 20% 16V	C335	1-136-159-00	FILM 0.033MF 5% 50V
C203	1-124-477-11	ELECT 47MF 20% 16V	C336	1-124-902-00	ELECT 0.47MF 20% 50V
C204	1-124-477-11	ELECT 47MF 20% 16V	C337	1-161-379-00	CERAMIC 0.01MF 20% 16V
C205	1-123-369-00	ELECT 4.7MF 20% 25V	C338	1-124-902-00	ELECT 0.47MF 20% 50V
C206	1-123-369-00	ELECT 4.7MF 20% 25V	C339	1-124-477-11	ELECT 47MF 20% 16V
C207	1-136-159-00	FILM 0.033MF 5% 50V	C340	1-124-236-00	ELECT 47MF 20% 16V
C208	1-136-159-00	FILM 0.033MF 5% 50V	C342	1-162-211-31	CERAMIC 33PF 5% 50V
C209	1-161-374-11	CERAMIC 0.0015MF 20% 16V	C343	1-162-211-31	CERAMIC 33PF 5% 50V
C210	1-161-374-11	CERAMIC 0.0015MF 20% 16V	C348	1-124-236-00	ELECT 47MF 20% 16V
C211	1-162-207-31	CERAMIC 22PF 5% 50V	C349	1-124-236-00	ELECT 47MF 20% 16V
C212	1-162-207-31	CERAMIC 22PF 5% 50V	C350	1-161-379-00	CERAMIC 0.01MF 20% 16V
C215	1-161-379-00	CERAMIC 0.01MF 20% 16V	C351	1-162-290-31	CERAMIC 470PF 10% 50V
C216	1-161-494-00	CERAMIC 0.022MF 25V	C401	1-106-351-00	MYLAR 0.0022MF 5% 50V
C217	1-161-494-00	CERAMIC 0.022MF 25V	C402	1-106-351-00	MYLAR 0.0022MF 5% 50V
C302	1-124-477-11	ELECT 47MF 20% 16V	C601	1-136-157-00	FILM 0.022MF 5% 50V
C303	1-161-375-00	CERAMIC 0.0022MF 20% 16V	CNJ1	*1-564-724-11	PIN, CONNECTOR (SMALL TYPE) 8 P
C304	1-162-203-31	CERAMIC 15PF 5% 50V	CNJ2	*1-564-724-31	PIN, CONNECTOR (SMALL TYPE) 8 P
C305	1-162-203-31	CERAMIC 15PF 5% 50V	CNJ3	*1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4 P
C306	1-136-159-00	FILM 0.033MF 5% 50V	CNJ4	*1-564-336-00	PIN, CONNECTOR 2P
C307	1-161-377-00	CERAMIC 0.0047MF 30% 16V	CNJ5	*1-564-337-00	PIN, CONNECTOR 3P
C308	1-136-159-00	FILM 0.033MF 5% 50V	CNJ6	1-566-211-11	PIN, CONNECTOR 4P (LINE IN/OUT)
C309	1-136-153-00	FILM 0.01MF 5% 50V	CNJ8	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8 P
C310	1-161-375-00	CERAMIC 0.0022MF 20% 16V	CNJ10	*1-566-165-11	CONNECTOR, BOARD TO BOARD 3P
C311	1-124-477-11	ELECT 47MF 20% 16V	CNJ11	*1-566-779-11	PIN, CONNECTOR (PC BOARD) 4P
C312	1-124-499-11	ELECT 1MF 20% 50V	D1	8-719-200-77	DIODE 10E2N
C313	1-161-375-00	CERAMIC 0.0022MF 20% 16V	D2	8-719-200-77	DIODE 10E2N
			D3	8-719-200-77	DIODE 10E2N

Ref.No.	Part No.	Description
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D4	8-719-200-77	DIODE 10E2N
D5	8-719-200-77	DIODE 10E2N
D6	8-719-109-83	DIODE RD5.1ES-B

D7	8-719-109-95	DIODE RD6.8ES-B
D8	8-719-940-76	DIODE 1SS132
D9	8-719-940-76	DIODE 1SS132

D10	8-719-940-76	DIODE 1SS132
D11	8-719-940-76	DIODE 1SS132
D12	8-719-940-76	DIODE 1SS132

IC1	8-752-031-80	IC CXA1081S
IC2	8-752-032-33	IC CXA1182S
IC3	8-752-322-04	IC CXD1125Q

IC5	8-759-805-29	IC CXD1162P-3
IC6	8-759-600-02	IC M5218L
IC7	8-759-600-02	IC M5218L

IC9	8-759-630-21	IC M5290P-16
IC10	8-759-605-43	IC M5231TL
IC11	8-759-805-18	IC LA6520

IC12	8-759-208-96	IC TA8406P
IC13	8-759-945-86	IC MSM6458-18SS
IC14	8-749-920-03	IC GP1U52
IC15	1-808-060-11	IC LC9600P-144

J2	△.1-526-931-11	INLET, AC
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M401	X-4917-504-1	MOTOR ASSY
M601	A-4608-330-A	MOTOR ASSY

PS1	△.1-532-686-00	LINK, IC
PS2	△.1-532-686-00	LINK, IC

PT901	△.1-449-025-11	TRANSFORMER, POWER
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Q1	8-729-808-76	TRANSISTOR 2SD1913SA-Q
Q2	8-729-808-72	TRANSISTOR 2SB1274SA-Q
Q3	8-729-801-83	TRANSISTOR 2SB1013

Q5	8-729-806-38	TRANSISTOR 2SC3399
Q6	8-729-806-38	TRANSISTOR 2SC3399
Q7	8-729-806-28	TRANSISTOR 2SC3402

Q8	8-729-806-38	TRANSISTOR 2SC3399
Q9	8-729-806-38	TRANSISTOR 2SC3399
Q10	8-729-806-38	TRANSISTOR 2SC3399

Q11	8-729-806-38	TRANSISTOR 2SC3399
Q14	8-729-806-20	TRANSISTOR 2SA1345
Q15	8-729-806-20	TRANSISTOR 2SA1345

Q16	8-729-107-91	TRANSISTOR 2SC3622-L
Q17	8-729-107-91	TRANSISTOR 2SC3622-L
Q18	8-729-107-91	TRANSISTOR 2SC3622-L
Q19	8-729-107-91	TRANSISTOR 2SC3622-L

Ref.No.	Part No.	Description				
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R101	1-249-425-11	CARBON	4.7K	5%	1/4W
R102	1-249-425-11	CARBON	4.7K	5%	1/4W
R103	1-249-429-11	CARBON	10K	5%	1/4W

R104	1-249-424-11	CARBON	3.9K	5%	1/4W
R105	1-249-424-11	CARBON	3.9K	5%	1/4W
R106	1-249-439-11	CARBON	68K	5%	1/4W

R107	1-249-417-11	CARBON	1K	5%	1/4W
R108	1-249-431-11	CARBON	15K	5%	1/4W
R109	1-249-381-11	CARBON	1	5%	1/4W

R201	1-249-423-11	CARBON	3.3K	5%	1/4W
R202	1-249-436-11	CARBON	39K	5%	1/4W
R203	1-249-436-11	CARBON	39K	5%	1/4W

R204	1-249-439-11	CARBON	68K	5%	1/4W
R205	1-249-439-11	CARBON	68K	5%	1/4W
R206	1-249-441-11	CARBON	100K	5%	1/4W

R207	1-249-441-11	CARBON	100K	5%	1/4W
R208	1-249-417-11	CARBON	1K	5%	1/4W
R209	1-249-417-11	CARBON	1K	5%	1/4W

R210	1-249-417-11	CARBON	1K	5%	1/4W
R211	1-249-417-11	CARBON	1K	5%	1/4W
R212	1-249-413-11	CARBON	470	5%	1/4W

R213	1-249-413-11	CARBON	470	5%	1/4W
R214	1-249-441-11	CARBON	100K	5%	1/4W
R215	1-249-441-11	CARBON	100K	5%	1/4W

R216	1-249-425-11	CARBON	4.7K	5%	1/4W
R217	1-249-425-11	CARBON	4.7K	5%	1/4W
R218	1-249-425-11	CARBON	4.7K	5%	1/4W

R219	1-249-425-11	CARBON	4.7K	5%	1/4W
R226	1-215-493-00	CARBON	1M	5%	1/4W
R227	1-215-493-00	CARBON	1M	5%	1/4W

R228	1-247-883-00	CARBON	150K	5%	1/4W
R229	1-247-883-00	CARBON	150K	5%	1/4W
R301	1-215-454-00	CARBON	24K	5%	1/4W

R302	1-249-428-11	CARBON	8.2K	5%	1/4W
R303	1-249-431-11	CARBON	15K	5%	1/4W
R304	1-249-431-11	CARBON	15K	5%	1/4W

R305	1-249-425-11	CARBON	4.7K	5%	1/4W
R306	1-249-417-11	CARBON	1K	5%	1/4W
R307	1-249-397-11	CARBON	22	5%	1/4W

R308	1-249-405-11	CARBON	100	5%	1/4W
R309	1-249-425-11	CARBON	4.7K	5%	1/4W
R310	1-215-472-00	CARBON	130K	5%	1/4W

R311	1-215-479-00	CARBON	270K	5%	1/4W
R312	1-249-435-11	CARBON	33K	5%	1/4W
R313	1-215-464-00	CARBON	62K	5%	1/4W

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description			
R314	1-249-425-11	CARBON	4.7K	5%	1/4W
R315	1-249-424-11	CARBON	3.9K	5%	1/4W
R316	1-249-439-11	CARBON	68K	5%	1/4W
R317	1-249-438-11	CARBON	56K	5%	1/4W
R318	1-249-381-11	CARBON	1	5%	1/4W
R319	1-249-381-11	CARBON	1	5%	1/4W
R320	1-249-440-11	CARBON	82K	5%	1/4W
R321	1-249-441-11	CARBON	100K	5%	1/4W
R322	1-249-441-11	CARBON	100K	5%	1/4W
R323	1-249-441-11	CARBON	100K	5%	1/4W
R324	1-249-429-11	CARBON	10K	5%	1/4W
R325	1-215-486-00	CARBON	510K	5%	1/4W
R326	1-249-414-11	CARBON	560	5%	1/4W
R327	1-249-433-11	CARBON	22K	5%	1/4W
R328	1-249-429-11	CARBON	10K	5%	1/4W
R329	1-249-441-11	CARBON	100K	5%	1/4W
R330	1-215-434-00	METAL	3.6K	1%	1/6W
R331	1-249-441-11	CARBON	100K	5%	1/4W
R332	1-215-493-00	CARBON	1M	5%	1/4W
R333	1-249-433-11	CARBON	22K	5%	1/4W
R334	1-249-429-11	CARBON	10K	5%	1/4W
R335	1-249-441-11	CARBON	100K	5%	1/4W
R336	1-249-441-11	CARBON	100K	5%	1/4W
R337	1-215-469-00	METAL	100K	1%	1/6W
R338	1-215-469-00	METAL	100K	1%	1/6W
R339	1-249-429-11	CARBON	10K	5%	1/4W
R341	1-249-429-11	CARBON	10K	5%	1/4W
R342	1-249-417-11	CARBON	1K	5%	1/4W
R343	1-249-417-11	CARBON	1K	5%	1/4W
R345	1-249-417-11	CARBON	1K	5%	1/4W
R348	1-249-417-11	CARBON	1K	5%	1/4W
R353	1-249-425-11	CARBON	4.7K	5%	1/4W
R354	1-249-425-11	CARBON	4.7K	5%	1/4W
R355	1-249-425-11	CARBON	4.7K	5%	1/4W
R356	1-249-425-11	CARBON	4.7K	5%	1/4W
R357	1-249-425-11	CARBON	4.7K	5%	1/4W
R358	1-249-425-11	CARBON	4.7K	5%	1/4W
R359	1-249-425-11	CARBON	4.7K	5%	1/4W
R360	1-249-424-11	CARBON	3.9K	5%	1/4W
R361	1-249-438-11	CARBON	56K	5%	1/4W
R362	1-249-417-11	CARBON	1K	5%	1/4W

Ref.No.	Part No.	Description
RV1	1-237-194-21	RES, ADJ, CARBON 20K
RV2	1-237-192-21	RES, ADJ, CARBON 5K
RV3	1-237-194-21	RES, ADJ, CARBON 20K
RV4	1-237-194-21	RES, ADJ, CARBON 20K
RV5	1-228-990-00	RES, ADJ, METAL GLAZE 1K
SW1	△.1-552-928-00	SWITCH, PUSH (POWER)
SW3	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(CLEAR)
SW4	1-554-088-00	SWITCH, KEY BOARD (OPEN/CLOSE)
SW5	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(REPEAT)
SW6	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(PLAY)
SW7	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(PROGRAM)
SW8	1-571-214-11	SWITCH, KEY BOARD (4 KEY)
SW9	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(AMS REVERSE)
SW11	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(PAUSE)
SW12	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(SHUFFLE)
SW13	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(CHECK)
SW14	1-571-214-11	SWITCH, KEY BOARD (4 KEY) (SEARCH FORWARD)
SW15	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(CHECK)
SW16	1-554-088-00	SWITCH, KEY BOARD (DISPLAY)
SW17	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(STOP)
SW18	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(CONTINUE)
SW401	1-571-274-11	SWITCH, LEAF (LIMIT)
SW901	1-570-203-11	SWITCH, LEAF (LOADING)
X1	1-567-301-21	OSCILLATOR, CRYSTAL (16MHz)
X2	1-567-686-11	OSCILLATOR, CERAMIC (4MHz)

ACCESSORY & PACKING MATERIAL

△.1-558-835-11	(AEP)...CORD, POWER
△.1-558-032-11	(UK)...CORD, POWER
*4-885-838-00	LABEL, CLASS 1
4-918-640-01	FASTENER, SIDE PLATE
4-918-644-01	PLATE, SIDE
4-922-618-01	CUSHION
*4-922-616-41	INDIVIDUAL CARTON
7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

